



MA Sustainable Forest
Bioenergy Initiative

Strategic Plan
Expert Advisory Meeting

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Massachusetts Potential for Biomass Energy Crops


Regional Economic Impact Analysis: Energy from Forest Biomass

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MA Potential for Biomass Energy Crops - Benefits


- Sustain and reinvigorate the agricultural economy;
 - Can create traditional agricultural landscapes;
 - Currently mown fields (maintenance) could be used to produce biomass crops;
 - Some biomass crops (switchgrass) are adapted to smaller scale production appropriate for Massachusetts;
 - Bulky and difficult to transport – if Massachusetts is to use biomass energy, most of it must come from nearby.
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MA Potential for Biomass Energy Crops - Opportunity

- Higher energy yield per acre vs. forest
 - But crop production cost higher than forest
- Western MA Heating Energy Demand – approx. 35 Trillion BTUs
 - Switch crops on existing farmland
 - 67k acres, 2.8 trillion BTUs
 - Currently un-used farmland
 - 57k acres, 2.5 trillion BTUs
 - Former farmland reverted back to forest
 - 567k acres, 18.1 trillion BTUs



MA Potential for Biomass Energy Crops - Research Needs

- Actual crop yields - field trials, cultural practices
 - Actual cost of production, supply curve
 - Forest re-conversion
 - Infrastructure development
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Economic Impact: Energy from Forest Biomass – Scenario

- 2015, Total New England Renewable Energy Demand - All Sources - 6,900 GWh
- MA Biomass Energy Estimate - 1,300 GWh
- 165 MW of Electricity Production + Thermal Units
 - 2 @ 50 MW Biomass Electric Plants
 - 2 @ 25 MW Biomass Electric Plants
 - 5 @ 3 MW combined heat and electricity
 - 25 @ 5 MMBTU/hr heat-only plants
- Creates new, annual, in-state demand for 1.7 million green tons of wood chips

Economic Impact: Energy from Forest Biomass – Results

- 5 Year Construction Build-out
 - 2,244 New Jobs
 - 1,898 in western MA five counties
 - 346 in rest of MA
 - \$270 Million in additional annual economic output
- On-going Electricity Generation
 - 593 New jobs
 - 440 in western MA five counties
 - 153 in rest of MA
 - \$79 Million in additional annual economic output